

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
30 June 2005 (30.06.2005)

PCT

(10) International Publication Number  
**WO 2005/059471 A1**

(51) International Patent Classification<sup>7</sup>: **G01B 21/04**  
(21) International Application Number:  
PCT/GB2004/005276

(22) International Filing Date:  
16 December 2004 (16.12.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
0329098.8 16 December 2003 (16.12.2003) GB

(71) Applicant (for all designated States except US): **RENISHAW plc** [GB/GB]; New Mills, Wotton-under-Edge Gloucestershire GL12 8JR (GB).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **MCMURTRY, David, Roberts** [GB/GB]; Park Farm, Stancombe, Dursley Gloucestershire GL11 6AT (GB). **MCFARLAND, Geoffrey** [GB/GB]; THE MANSE, 22 Church Road, Upper Cam, Dursley Gloucestershire GL11 5PG (GB). **JONAS, Kevyn Barry** [GB/GB]; 15c Beaufort Road, Clifton, Bristol Bristol BS8 2JU (GB).

(74) Agents: **LELAND, Emma, Clare et al.**; Renishaw plc, Patent Department, New Mills, Wotton-under-Edge Gloucestershire GL12 8JR (GB).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

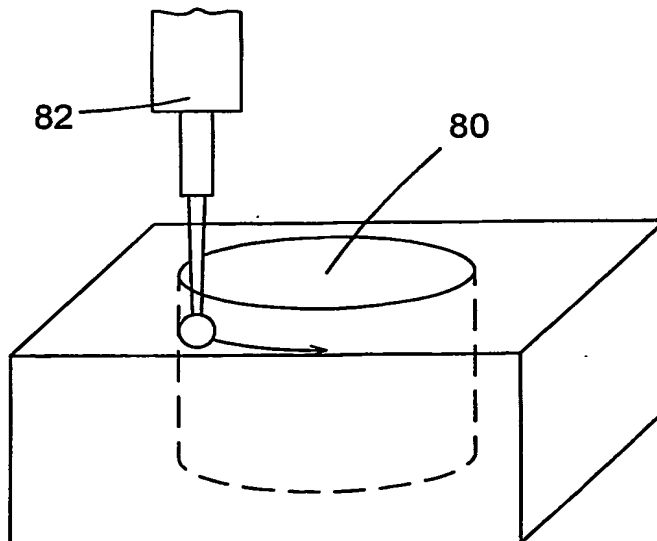
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:

— of inventorship (Rule 4.17(iv)) for US only

[Continued on next page]

(54) Title: METHOD OF CALIBRATING A COORDINATE POSITIONING APPARATUS



(57) Abstract: A method of measuring an object with a coordinate positioning apparatus, comprises the following steps: placing the object within the working volume of the coordinate positioning apparatus; measuring the object with a workpiece contacting probe to create measurement data of the object, the measurement data being collected at multiple probe forces; for at least one location on the surface of the object, determining a function or look up table relating the measurement error data to the probe force; for said at least one location on the surface of the object, using the function or look up table to determine the measurement data corresponding to zero probe force; and outputting the measurement data corresponding to zero probe force as the measurement of the object.



**Published:**

— with international search report

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*